

Recommended Four-Month Plan for Implementing Principle #2

Prepared for MCAC by Urban Habitat Program
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Executive Summary

At its March 22 meeting, the Commission requested a four-month analysis of the presence and extent of inequity in transportation funding based on race and income. Such an equity analysis entails two essential steps. First, it pairs identifiably minority or low-income populations with counterpart populations. Second, those paired populations are compared in terms of various dimensions of equity.

Staff initially proposed an analysis using the “communities of concern” identified in MTC’s 2004 Equity Analysis. The proposed analysis would have attempted to determine whether MTC has spent “at least as much per capita on transportation projects that benefit communities of concern versus all other communities.” Staff acknowledges that a significant unanswered question is deciding how much benefit residents of one neighborhood get from a transportation project or service that affects many neighborhoods. This question affects a host of highway, bridge/tunnel, street and road, and transit investments. The fact that this question cannot be answered, however, does not mean that minority and low-income communities derive equal benefits from all of those investments.

This staff proposal, however, would overlook several important ways to define “communities of concern” as well as several important dimensions of equity. In order to provide a more meaningful analysis, while avoiding unduly subjective assumptions, this proposal recommends four simplified equity analyses that can be easily completed within the time allotted by the Commission.

This proposal begins by identifying three different kinds of communities of concern. In addition to minority and low-income communities defined in terms of geographic neighborhoods, as in the staff proposal, this proposal identifies two other communities of concern: (a) the population of all persons without access to a car (in other words, all transit-dependent people), and (b) the riders of transit systems with high rates of minority or low-income riders.

This proposal also articulates three separate dimensions of equity: equity with respect to funding; equity with respect to the level of service provided with that funding; and equity with respect to the ability to get to important destinations (mobility). (Funding is referred to as a transportation “input,” while the level and quality of transportation services provided is an “output” and the level of mobility is an “outcome” of transportation funding.)

A complete equity analysis would require each of the three communities of concern (geographic; transit-dependent; and minority/low-income riders) to be analyzed with respect to each of these three dimensions of equity. Given the time constraints the Commission has

imposed, this proposal recommends four simplified analyses that can be performed with existing data. These analyses would answer the following four questions:

1. Does the amount spent per transit-dependent person equal the amount spent per person with a private car?
2. Does the amount spent per rider of transit operators with a predominantly minority or low-income ridership equal the amount spent per rider of other transit operators?
3. Have gaps in Lifeline transit service been closed for riders of transit operators with predominantly minority or low-income riders to at least the same extent as for riders of other transit operators; and have gaps increased no more for the former than for the latter?
4. How many jobs can be reached, on average, from neighborhoods with high rates of transit-dependency compared to neighborhoods with higher rates of auto ownership?

The first two questions, like the question proposed by staff, look at equity in terms of equality of funding inputs. However, the two analyses of funding proposed here—funding per person based on transit-dependent communities of concern and transit ridership communities of concern—can be performed with more objective assumptions about the allocation of benefits, based on actual usage.

Finally, it is important to note that, while the four analyses proposed here are approximations rather than comprehensive measures of equity, the nature of the approximation is that it will understate, rather than exaggerate, the extent of inequity. For instance, if “transit-dependent” communities of concern are defined for the sake of simplicity to include only those households with no car at all, the number of persons who do not have access to their own car will be significantly understated, and the expenditure per transit-dependent person will be overstated. In the near future, MTC should collect the data needed to complete a comprehensive analysis of equity.

Introduction

The purpose of analyzing environmental justice for purposes of Principles 3 and 4 is to ensure that minority and low-income communities enjoy equally in the benefits of transportation planning and funding (MCAC Principle #3), without bearing a disproportionate share of the burdens associated with it (Principle #4). See 2001 RTP Equity Analysis, page 1-1; 2004 RTP Equity Analysis, page ES-1.

Given the Commission’s direction that an analysis pursuant to Principle #2 be completed in four months, it may only be possible to perform a first approximation. This proposal for that first approximation, while far from comprehensive, can be completed within the requested timeframe, and in some respects builds upon analyses that MTC has conducted in the past.

However, it must be kept in mind that this first approximation, because of extensive aggregation and averaging, will understate the full extent of inequity.

Basic Framework

An equity analysis entails two essential steps. First, it pairs identifiable minority or low-income populations with counterpart populations. Second, those paired populations are compared in terms of various dimensions of equity. The two steps are described below:

1. Identifiable Populations: Equity must be analyzed for each identifiable population that includes a disproportionate share of minority or low-income residents. There are several communities of concern in addition to the geographical “communities of concern,” defined in MTC’s Equity Analysis as geographic communities with at least 70% minorities or 30% low-income, or both. Transit-dependent individuals and riders of transit operators that have disproportionately minority or low-income riderships are non-geographic communities of concern that are identifiable and likely to satisfy these same numeric thresholds.

As a first step, staff should determine which of these three populations meets the communities of concern thresholds for each county or transit operator, because it is comprised of disproportionate numbers of minority individuals, or low-income individuals, or both.

2. Dimensions of Equity: For each relevant community or population of concern, equity should be analyzed in three dimensions: inputs (funding), outputs (the service that is delivered with that funding) and outcomes (the relative mobility and accessibility of low-income and minority families).

The range of potential analyses is represented in the attached grid. For instance, Cell #4 analyzes the transit-dependent population with respect to funding inputs. Each cell in the grid represents a separate analysis that must ultimately be performed in a comprehensive manner. If the analysis in any of the nine cells shows inequity, corrective action should be taken. These are not the only possible combinations, but are the most obvious places to begin to look for inequities.

As indicated in the list of MTC’s prior EJ analyses (distributed at April 11, 2006 MCAC meeting), MTC has limited its analyses in the past to one population—geographic communities of concern (based on Traffic Analysis Zones, or TAZs)—and to one of three dimensions of equity—equity in terms of outcomes (as measured by the number of destinations that can be reached from communities of concern within 30 to 60 minutes by transit and by auto). (Cell #3 in the grid.) However, in its effort to measure these mobility and accessibility outcomes, MTC has found it necessary to distinguish between the levels attained by auto and by transit, a proxy for a full-fledged analysis of equity for transit-dependent populations.

This proposal recommends four relatively simple analyses, corresponding to four of the nine cells on the grid. Due to the time constraints imposed by the Commission and data constraints, simplified analyses are proposed for this initial study, even though they are likely to understate the extent of inequity. A complete analysis of equity for each identifiable population of

concern (including populations not identified for purposes of this initial analysis) with respect to each dimension of equity must be undertaken, based on more complete data, in the near future.

Funding (Inputs) Analyses

At the April 11 MCAC meeting, staff proposed to conduct a funding analysis (inputs). Staff is proposing as its “definition of equity” for the allocation of funding “that MTC should spend at least as much per capita on transportation projects that benefit” minority and low-income populations versus all other populations. Staff has further proposed to look backward over a 5-10 year timeframe. The staff proposal to analyze inputs as one of several essential components of the analysis is appropriate, as is the proposed “definition of equity” with respect to funding inputs as dollars per person. A 20-year retrospective timeframe seems most appropriate, due to the fact that some funding, especially for large capital projects, tends to be lumped in certain years, rather than spread out evenly.

The particular analysis staff has proposed, however, would address only one of at least three disproportionately minority and low-income populations: it would “compare transportation funds that are spent in identified communities of concern versus those spent outside communities of concern,” defining those communities geographically. (Cell #1 on the grid.) In limiting its proposal to this geographic population, however, staff has identified a serious practical obstacle: how to assign benefits to projects with regional impacts as between communities of concern and other communities. This appears to be a very significant problem, since there does not seem to be any objective methodology for apportioning the estimated benefits of many of the investments that MTC makes on the basis of the geographic borderline between one neighborhood and another.

That obstacle can be significantly reduced, if not eliminated, if the funding analysis is conducted with respect to each of the two other disproportionately minority and low-income populations of concern—transit-dependent residents, and riderships of individual transit operators with unusually high proportions of minority or low-income riders.

Funding Analysis #1: For **transit-dependent residents**—those that have no car available to them—an analysis of funding per capita, or dollars per person (compared to dollars per person for residents with a car) should be made, County by County, for each County in which Census data shows that the transit-dependent population is more heavily minority or low-income than the population as a whole. (Cell # 4 on the grid.) This would entail apportioning the benefit of various categories of transportation spending (bridges, highways, local streets and roads, transit, etc.) among the two populations. Since reasonable assumptions can be made about the different benefits that drivers and non-drivers derive from the road system, this is a far simpler task than the one proposed by staff. It will also yield more meaningful results, in a format like this:

Categories of funds	Total Dollars spent in the County per year in each category		Benefit per Transit-Dependent person	Benefit per person with car
Bridges/Highways				
Local Streets and Roads				
Transit				
Total			\$X per person	\$Y per person

The bottom line would provide an estimated total expenditure per transit-dependent person compared to the estimated expenditure per person with a car. The Transportation Justice Working Group has suggestions on methodology for this analysis that it would be happy to share with the Subcommittee and staff.

We note again that this approximation will understate the extent of inequity, since it ignores households that may have one or more cars, but fewer than one car per adult. By using zero-car households as the focus population, however, the task of allocating benefits for an entire household is simplified.

Funding Analysis #2: For **riderships of individual transit operators**, a separate analysis should be made that shows the relative demographics (by race/ethnicity and income) and dollars per rider for each transit operator. (Cell # 7 on the grid.) This analysis should include both capital funds and operating funds over at least a 20-year period (e.g., FY 1985-FY 2004), and should be broken out separately where a single operator runs different transit modes (e.g., rail, bus, ferry), to the extent that separate demographic data is available for the ridership of each mode.

Outputs and Outcomes Analyses

Analyzing equity with respect to inputs (funding) is just one of three dimensions in which equity should be measured. Two further analyses can be easily made, building upon analyses that MTC has already conducted in the past. Again, these are not ideal, but will be useful as first approximations, until a comprehensive analysis of equity can be performed with more complete data.

Analysis of Outputs: The 2001 Lifeline Transportation Network study measured temporal and spatial gaps in identified Lifeline routes for each of the region's transit operators. (Cell #8 on the grid.) Since 2001, transit operators have cut some service, and added other service. At the April 11 MCAC meeting, an updated analysis of these gaps was requested, and Mr. Kimsey indicated it could be performed. The proposal is that this analysis be updated in order to determine (a) whether gaps have increased more, and (b) whether gaps have been filled less, for disproportionately minority or low-income riderships than for other riderships. This analysis should be conducted individually for each of the region's transit operators. Where a single operator runs different transit modes (e.g., rail, bus, ferry), those modes should be analyzed separately, to the extent that separate demographic data is available for the ridership of each.

Analysis of Outcomes: In MTC's Equity Analyses of the 2001 and 2005 Regional Transportation Plans, it attempted to measure whether the proposed 25-year investments would increase or decrease mobility and accessibility for residents of geographic communities of concern. To do this, MTC compared the number of jobs that could be reached within 30, 60, etc. minutes by auto and by transit from each TAZ. It assumed that existing service would not be cut, but only augmented over time. MCAC expressed serious misgivings with this methodology. As MCAC noted in its December 10, 2004, Comments on the Transportation 2030 Equity Analysis Report, "critical variables may have been left out of the analysis that would lead to different conclusions."

The previous equity analysis can be made to directly compare communities of concern with their counterparts by adding the logical step of calculating overall results for drivers and non-drivers. (Cell #3 on the grid.) In order to perform MTC's previous Equity Analysis, staff calculated the "outcome" (jobs accessible by auto and by transit) for each TAZ. Staff's analysis also categorized each TAZ as to whether it fell within or outside of a community of concern. Each TAZ has a known share of transit-dependent households, per the census data reported in the Equity Analysis.

Using this data, the analysis would calculate a composite "outcome" for each TAZ: the total number of jobs accessible from that TAZ by auto multiplied by the percentage of households with an auto, plus the total number of jobs accessible from that TAZ by transit multiplied by the share of vehicle-less households. The resulting composite outcomes for each TAZ can then be mapped, and an average of the composite outcomes for geographic communities of concern can be compared to the average composite for the rest of the region.

Additional Data Collection

While the four analyses proposed above can be performed with available data, staff's memo correctly recognizes that additional data will need to be collected in order to conduct a more comprehensive set of analyses in the future. Staff notes that "one obvious data gap is the lack of consistent data being collected for the race/ethnicity and income profiles for all transit users in the Bay Area." Consistent data should also be collected by operators to reflect, among other things, rates of transit-dependency among transit riders.

Other obvious data gaps were raised in connection with the PPIC/MTC affordability study, Transportation Spending by Low-Income California Households, which relied on statewide, rather than Bay Area data, and therefore reached inaccurate conclusions (including the unwarranted conclusion that "cost is unlikely to be a barrier to transit use for most low-income households").

Grid of Possible Equity Analyses

	←	Equity Dimensions	→
Populations/ Communities of Concern	<i>Inputs (Funding)</i>	<i>Outputs (Service)</i>	<i>Outcomes (Mobility/Accessibility)</i>
<i>Geographic Communities of Concern</i> (vs. other communities)	Cell #1 [MTC Staff proposal of 4-11-06]	Cell #2 [Future data and analysis needed]	Cell #3 [MTC's Equity Analyses of 2001 and 2005 RTPs] PROPOSED ADDITIONAL ANALYSIS
<i>Transit dependent individuals</i> (vs. individuals with a car)	Cell #4 PROPOSED NEW ANALYSIS #1	Cell #5 [Future data and analysis needed]	Cell #6 [Future data and analysis needed]
<i>Riderships of individual transit operators</i> (disproportionately minority/low- income vs. others)	Cell #7 PROPOSED NEW ANALYSIS #2	Cell #8 [2001 Lifeline Transp. Network Study] PROPOSED ADDITIONAL ANALYSIS	Cell #9 [Future data and analysis needed]